



# SEQUENCE LISTING

<110> Wittekind, Michael  
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Zhang, Yaqun  
Goldfarb, Valentina

<120> Modified Forms of Hepatitis C NS3 Protease for  
Facilitating Inhibitor Screening and Structural Studies  
of Protease:Inhibitor Complexes

<130> DB17Sequences

<140> 09/478,479

<141> 2000-01-06

<150> 60/115,271

<151> 1999-01-08

<160> 48

<170> PatentIn Ver. 2.0  
PatentIn Ver. 3.2

<210> 1

<211> 182

<212> PRT

<213> Hepatitis C virus

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Cys Ile Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly  
20 25 30

Glu Val Gln Ile Val Ser Thr Ala Ala Gln Thr Phe Leu Ala Thr Cys  
35 40 45

Ile Asn Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr  
50 55 60

Ile Ala Ser Pro Lys Gly Pro Val Ile Gln Met Tyr Thr Asn Val Asp  
65 70 75 80

Lys Asp Leu Val Gly Trp Pro Ala Pro Gln Gly Ser Arg Ser Leu Thr  
85 90 95

Pro Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala  
100 105 110

Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu  
115 120 125

Ser Pro Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu



115                      120                      125  
 Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro  
     130                      135                      140  
 Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ala  
     145                      150                      155                      160  
 Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val  
                     165                      170                      175  
 Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr Thr Met  
                     180                      185                      190  
 Arg Ser Pro  
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<210> 4  
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 <212> DNA  
 <213> Hepatitis C virus

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 caggttgaag gtgaagttca gatcgtttcc accgctgctc agaccttccg ggctacctgc 180  
 atcaacgggtg ttgtctggac cgtttaccac ggtgctggta cccgtaccat cgcttccccg 240  
 aaaggtccgg ttatccagat gtacaccaac gttgaâaaag acctgggttg ttggccggct 300  
 ccgcagggtt cccgttccct gaccccgctc acctgcgggt cctccgacct gtacctgggt 360  
 acccgtcacg ctgacgttat cccggttcgt cgtcgtgggt actcccggtg ttccctgctg 420  
 tccccgcgtc cgatctccta cctgaaagggt tcctccgggt gtccgctgct gtgccccggt 480  
 ggtcacgctg ttggtatott ccgtgctgct gtttgcaccc gtggtggtgc taaagctggt 540  
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<210> 5  
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 <212> PRT  
 <213> Hepatitis C virus

<400> 5  
 Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr  
     1                      5                      10                      15

<210> 6  
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 <212> PRT  
 <213> Hepatitis C virus

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     1                      5                      10                      15

<210> 7  
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<212> PRT  
<213> Hepatitis C virus

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1 5 10 15

<210> 8  
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<213> Hepatitis C virus

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<210> 9  
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<213> Hepatitis C virus

<400> 9  
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<213> Hepatitis C virus

<400> 10  
Gln Gln Thr Arg Gly Glu Gln Gly Cys Asp Glu Thr Ser Glu Thr  
1 5 10 15

<210> 11  
<211> 15  
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<213> Hepatitis C virus

<400> 11  
Gln Gln Thr Arg Gly Glu Glu Gly Cys Glu Gln Thr Ser Glu Thr  
1 5 10 15

<210> 12  
<211> 195  
<212> PRT  
<213> Hepatitis C virus

<400> 12  
Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Val Leu Asn  
1 5 10 15

Gly Ala Tyr Ala Gln Gln Thr Arg Gly Glu Glu Gly Cys Gln Glu Thr  
 20 25 30  
 Ser Gln Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val Gln Ile  
 35 40 45  
 Val Ser Thr Ala Ala Gln Thr Phe Leu Ala Thr Cys Ile Asn Gly Val  
 50 55 60  
 Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala Ser Pro  
 65 70 75 80  
 Lys Gly Pro Val Ile Gln Met Tyr Thr Asn Val Asp Lys Asp Leu Val  
 85 90 95  
 Gly Trp Pro Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys Thr Cys  
 100 105 110  
 Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val Ile Pro  
 115 120 125  
 Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro  
 130 135 140  
 Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ala  
 145 150 155 160  
 Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg Gly Val  
 165 170 175  
 Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr Thr Met  
 180 185 190  
 Arg Ser Pro  
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<210> 13  
 <211> 588  
 <212> DNA  
 <213> Hepatitis C virus

<400> 13  
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 caggttgaag gtgaagttca gatcgtttcc accgctgctc agaccttcc ggctacctgc 180  
 atcaacgggtg tttgctggac cgtttaccac ggtgctggta cccgtaccat cgcttccccg 240  
 aaagggtccgg ttatccagat gtacaccaac gttgacaaag acctgggttg ttggccggct 300  
 ccgcagggtt cccgttccct gaccccgctc acctgcgggt cctccgacct gtacctggtt 360  
 acccgtcacg ctgacgttat cccggttcgt cgctcggttg actcccggtg ttccctgctg 420  
 tccccgcgtc cgatctccta cctgaaagggt tcctccgggt gtccgctgct gtgcccggct 480  
 gggtcacgctg ttggtatctt ccgtgctgct gtttgacccc gtggtgttgc taaagctggt 540  
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<210> 14  
 <211> 197  
 <212> PRT

<213> Hepatitis C virus

<400> 14

Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Asn Leu Ser  
1 5 10 15

Gly Asp Thr Ala Tyr Ala Gln Gln Thr Arg Gly Glu Glu Gly Cys Gln  
20 25 30

Glu Thr Ser Gln Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val  
35 40 45

Gln Ile Val Ser Thr Ala Ala Gln Thr Phe Leu Ala Thr Cys Ile Asn  
50 55 60

Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala  
65 70 75 80

Ser Pro Lys Gly Pro Val Ile Gln Met Tyr Thr Asn Val Asp Lys Asp  
85 90 95

Leu Val Gly Trp Pro Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys  
100 105 110

Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val  
115 120 125

Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro  
130 135 140

Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys  
145 150 155 160

Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg  
165 170 175

Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr  
180 185 190

Thr Met Arg Ser Pro  
195

<210> 15

<211> 594

<212> DNA

<213> Hepatitis C virus

<400> 15

atgaaaaaaa aaggatccgt tgttatcgtc ggccgtatca acctgtccgg tgacaccgct 60  
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aaaaaccagg ttgaagggtga agttcagatc gtttccaccg ctgctcagac cttcctggct 180  
acctgcatca acggtgtttg ctggaccgtt taccacggtg ctggtaccgg taccatcgct 240  
tccccgaaag gtcgggttat ccagatgtac accaacgttg acaaagacct ggttggttgg 300  
ccggctccgc aggggttcccg ttccctgacc ccggtgcacct gcggttcctc cgacctgtac 360  
ctggttaccc gtcacgctga cgttatcccg gttcgtcgtc gtggtgactc ccgtgggtcc 420  
ctgctgtccc cgcgtccgat ctctacctg aaaggttcct ccggtgggtcc gctgctgtgc 480

ccggctgggc acgctgttgg tatcttccgt gctgctgttt gcacccgtgg tgttgctaaa 540  
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<210> 16  
 <211> 197  
 <212> PRT  
 <213> Hepatitis C virus

<400> 16  
 Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Asn Leu Ser  
   1                  5                  10                  15  
 Gly Asp Thr Ala Tyr Ala Gln Gln Thr Arg Gly Glu Glu Gly Cys Gln  
           20                  25                  30  
 Glu Thr Ser Gln Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val  
           35                  40                  45  
 Gln Ile Val Ser Thr Ala Thr Gln Thr Phe Leu Ala Thr Cys Ile Asn  
       50                  55                  60  
 Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala  
       65                  70                  75                  80  
 Ser Pro Lys Gly Pro Val Thr Gln Met Tyr Thr Asn Val Asp Lys Asp  
           85                  90                  95  
 Leu Val Gly Trp Gln Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys  
       100                  105                  110  
 Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val  
       115                  120                  125  
 Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro  
       130                  135                  140  
 Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys  
       145                  150                  155                  160  
 Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg  
           165                  170                  175  
 Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr  
           180                  185                  190  
 Thr Met Arg Ser Pro  
       195

<210> 17  
 <211> 594  
 <212> DNA  
 <213> Hepatitis C virus

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aaaaaccagg ttgaaggtga agttcagatc gtttccaccg ctaccagac cttcctggct 180  
 acctgcatca acggtgtttg ctggaccgtt taccacggtg ctggtaccg taccatcgct 240  
 tccccgaaag gtccggttac ccagatgtac accaacgttg acaaagacct ggttggttgg 300  
 caggctccgc aggggtcccg ttccctgacc ccggtgcacct gcggttcctc cgacctgtac 360  
 ctggttaccc gtcacgctga cgttatcccg gttcgtcgtc gtggtgactc ccgtgggtcc 420  
 ctgctgtccc cgcgtccgat ctccctacct aaaggttcc cgggtggtcc gctgctgtgc 480  
 ccggctgggc acgctgttgg tatcttccgt gctgctgttt gcacccgtgg tgttgctaaa 540  
 gctgttgact tcattccggt tgaatccctg gaaaccacca tgcgttcccc gtga 594

<210> 18

<211> 197

<212> PRT

<213> Hepatitis C virus

<400> 18

Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Asn Leu Ser  
 1 5 10 15

Gly Asp Thr Ala Tyr Ala Gln Gln Thr Arg Gly Glu Glu Gly Cys Gln  
 20 25 30

Glu Thr Ser Gln Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val  
 35 40 45

Gln Ile Val Ser Thr Ala Thr Gln Thr Phe Leu Ala Thr Ser Ile Asn  
 50 55 60

Gly Val Leu Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala  
 65 70 75 80

Ser Pro Lys Gly Pro Val Thr Gln Met Tyr Thr Asn Val Asp Lys Asp  
 85 90 95

Leu Val Gly Trp Gln Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys  
 100 105 110

Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val  
 115 120 125

Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro  
 130 135 140

Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys  
 145 150 155 160

Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Ser Thr Arg  
 165 170 175

Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr  
 180 185 190

Thr Met Arg Ser Pro  
 195

<210> 19

<211> 594



<212> DNA

<213> Hepatitis C virus

<400> 19

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aaaaaccagg ttgaagggtga agttcagatc gtttccaccg ctaccagac cttcctggct 180
acctccatca acggtgttct gtggaccggt taccacggtg ctggtaccg taccatcgct 240
tccccgaaag gtccgggttac ccagatgtac accaacggtg acaaagacct ggttggttgg 300
caggctccgc aggggtcccg ttccctgacc cegtgcacct gcggttcctc cgacctgtac 360
ctggttaccc gtcacgtga cgttatcccg gttcgtcgtc gtggtgactc ccgtgggtcc 420
ctgctgtccc cgcgtccgat ctctacctg aaaggttcct ccggtgggtcc gctgctgtgc 480
ccggctggtc acgctgttgg tatcttccgt gctgctgttt ccaccggtg tggtgctaaa 540
gctgttgact tcatcccggt tgaatccctg gaaaccacca tgcgttcccc gtga 594
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<210> 20

<211> 197

<212> PRT

<213> Hepatitis C virus

<400> 20

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Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Asn Leu Ser
  1             5             10             15
```

```
Gly Asp Thr Ala Tyr Ala Gln Gln Thr Arg Gly Glu Gln Gly Cys Gln
          20             25             30
```

```
Lys Thr Ser His Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val
          35             40             45
```

```
Gln Ile Val Ser Thr Ala Thr Gln Thr Phe Leu Ala Thr Ser Ile Asn
          50             55             60
```

```
Gly Val Leu Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala
          65             70             75             80
```

```
Ser Pro Lys Gly Pro Val Thr Gln Met Tyr Thr Asn Val Asp Lys Asp
          85             90             95
```

```
Leu Val Gly Trp Gln Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys
          100            105            110
```

```
Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val
          115            120            125
```

```
Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro
          130            135            140
```

```
Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys
          145            150            155            160
```

```
Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Ser Thr Arg
          165            170            175
```

```
Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr
          180            185            190
```

Thr Met Arg Ser Pro  
195

<210> 21  
<211> 594  
<212> DNA  
<213> Hepatitis C virus

<400> 21  
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aaaaaccagg ttgaagggtga agttcagatc gtttccaccg ctaccagac cttcctggct 180  
acctccatca acggtgttct gtggaccggt taccacggtg ctggtaccg taccatcgct 240  
tccccgaaag gtcggtttac ccagatgtac accaacgttg acaaagacct gggttggttg 300  
caggctccgc aggggttccg ttccctgacc ccggtgcacct gcggttcctc cgacctgtac 360  
ctggttaccg gtcacgtgta cgttatcccg gttcgtcgtc gtggtgactc ccgtgggttc 420  
ctgctgtccc cgcgtccgat ctctacctg aaaggttctt ccggtgggtc gctgctgtgc 480  
ccggtgtggt acgctgttgg tatcttccgt gctgctgttt ccacctgtgg tgttgctaaa 540  
gctgttgact tcatcccggt tgaatccctg gaaaccacca tgcgttcccc gtga 594

<210> 22  
<211> 197  
<212> PRT  
<213> Hepatitis C virus

<400> 22  
Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Asn Leu Ser  
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Gly Asp Thr Ala Tyr Ala Gln Gln Thr Arg Gly Glu Gln Gly Thr Gln  
20 25 30  
Lys Thr Ser His Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val  
35 40 45  
Gln Ile Val Ser Thr Ala Thr Gln Thr Phe Leu Ala Thr Ser Ile Asn  
50 55 60  
Gly Val Leu Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala  
65 70 75 80  
Ser Pro Lys Gly Pro Val Thr Gln Met Tyr Thr Asn Val Asp Lys Asp  
85 90 95  
Leu Val Gly Trp Gln Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys  
100 105 110  
Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val  
115 120 125  
Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro  
130 135 140  
Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys  
145 150 155 160

Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Ser Thr Arg  
165 170 175

Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr  
180 185 190

Thr Met Arg Ser Pro  
195

<210> 23

<211> 594

<212> DNA

<213> Hepatitis C virus

<400> 23

atgaaaaaaa aaggatccgt tgttatcgtc ggccgtatca acctgtccgg tgacaccgct 60  
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aaaaaccagg ttgaagggtga agttcagatc gtttccaccg ctaccagac cttcctggct 180  
acctccatca acggtgttct gtggaccggt taccacgggt ctggtaccgg taccatcgct 240  
tccccgaaag gtccgggttac ccagatgtac accaacgttg acaaagacct ggttggttgg 300  
caggctccgc aggggttcccg ttccctgacc ccgtgcacct gcggttctct cgacctgtac 360  
ctggttaccc gtcacgctga cgttatcccg gttcgtcgtc gtggtgactc ccgtgggtcc 420  
ctgctgtccc cgcgtccgat ctctacctg aaaggttcct ccggtgggtcc gctgctgtgc 480  
ccggtgtggt acgctgttgg tatcttccgt gctgctgttt ccaccctggg tgttgctaaa 540  
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<210> 24

<211> 197

<212> PRT

<213> Hepatitis C virus

<400> 24

Met Lys Lys Lys Gly Ser Val Val Ile Val Gly Arg Ile Asn Leu Ser  
1 5 10 15

Gly Asp Thr Ala Tyr Ala Gln Gln Thr Arg Gly Leu Leu Gly Cys Ile  
20 25 30

Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly Glu Val  
35 40 45

Gln Ile Val Ser Thr Ala Ala Gln Thr Phe Leu Ala Thr Cys Ile Asn  
50 55 60

Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr Ile Ala  
65 70 75 80

Ser Pro Lys Gly Pro Val Ile Gln Met Tyr Thr Asn Val Asp Lys Asp  
85 90 95

Leu Val Gly Trp Pro Ala Pro Gln Gly Ser Arg Ser Leu Thr Pro Cys  
100 105 110

Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala Asp Val  
115 120 125

Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro  
130 135 140

Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys  
145 150 155 160

Pro Ala Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys Thr Arg  
165 170 175

Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Leu Glu Thr  
180 185 190

Thr Met Arg Ser Pro  
195

<210> 25  
<211> 594  
<212> DNA  
<213> Hepatitis C virus

<400> 25  
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aaaaaccagg ttgaaggtga agttcagatc gtttccaccg ctgctcagac cttcctggct 180  
acctgcatca acggtgtttg ctggaccggt taccacgggt ctggtaccgg taccatcgct 240  
tccccgaaag gtcgggttat ccagatgtac accaacgttg acaaagacct ggttggttg 300  
cgggtccgc agggttcccg ttcctgacc cgtgcacct gcggttcctc cgacctgtac 360  
ctggttaccg gtcacgtga cgttatcccg gttcgtcgtc gtggtgactc ccgtgggtcc 420  
ctgctgtccc cgcgtccgat ctctacctg aaaggttcc cgggtgggtc gctgctgtgc 480  
cgggtgggtc acgctgttg tttcttccgt gctgctgttt gcaccctggg tgttgctaaa 540  
gctgttgact tcatcccggt tgaatccctg gaaaccacca tgcgttcccc gtga 594

<210> 26  
<211> 11  
<212> PRT  
<213> Hepatitis C virus

<400> 26  
Gly Ser Val Val Ile Val Gly Arg Ile Val Leu  
1 5 10

<210> 27  
<211> 68  
<212> DNA  
<213> Hepatitis C Virus

<400> 27  
tatgaaaaaa aaaggatccg ttgttatcgt cggccgtata gtactgaacg gtgcttacgc 60  
tcgcagac 68

<210> 28  
<211> 71  
<212> DNA

<213> Hepatitis C Virus

<400> 28  
tcgagttctgc tgagcgtaag cacggttcag tactatacgg ccgacgataa caacggatcc 60

ttttttttttc a 71

<210> 29

<211> 19

<212> DNA

<213> Hepatitis C Virus

<400> 29  
cagcagactc gaggtctgc 19

<210> 30

<211> 25

<212> DNA

<213> Hepatitis C Virus

<400> 30  
gcacgaattc acggggaacg catgg 25

<210> 31

<211> 17

<212> PRT

<213> Hepatitis C Virus

<220>

<221> MISC\_FEATURE

<222> (5)..(13)

<223> Xaa = His or Glu or Gln or Asp or Asn or Lys

<400> 31

Gln Thr Arg Gly Xaa Xaa Gly Cys Xaa Xaa Thr Ser Xaa Thr Gly Arg  
1 5 10 15

Asp

<210> 32

<211> 51

<212> DNA

<213> Hepatitis C Virus

<220>

<221> misc\_feature

<222> (13)..(39)

<223> v = g or c or a

<400> 32

cagactcgag gtvavvavgg ttgcvavvav acctccvava ccggtcgtga c

51

<210> 33  
<211> 15  
<212> PRT  
<213> Hepatitis C Virus

<220>  
<221> MISC\_FEATURE  
<222> (4)..(4)  
<223> wherein Xaa = Asn or Ile

<220>  
<221> MISC\_FEATURE  
<222> (8)..(8)  
<223> wherein Xaa = Asn or Asp

<220>  
<221> MISC\_FEATURE  
<222> (12)..(12)  
<223> wherein Xaa = Ser or Ala

<400> 33

Gly	Arg	Ile	Xaa	Leu	Ser	Gly	Xaa	Thr	Ala	Tyr	Xaa	Gln	Gln	Thr
1				5				10					15	

<210> 34  
<211> 44  
<212> DNA  
<213> Hepatitis C Virus

<220>  
<221> misc\_feature  
<222> (11)..(11)  
<223> wherein w = a or t

<220>  
<221> misc\_feature  
<222> (22)..(22)  
<223> wherein r = a or g

<220>  
<221> misc\_feature  
<222> (34)..(34)  
<223> wherein k = g or t

<400> 34  
ggccgtatca wcctgtccgg tracaccgct tackctcagc agac

44

<210> 35  
<211> 44

<212> DNA  
 <213> Hepatitis C Virus  
  
 <220>  
 <221> misc\_feature  
 <222> (7)..(7)  
 <223> wherein w = a or t  
  
 <220>  
 <221> misc\_feature  
 <222> (18)..(18)  
 <223> wherein y = c or t  
  
 <220>  
 <221> misc\_feature  
 <222> (30)..(30)  
 <223> wherein m = a or c  
  
 <400> 35  
 catagtwgga caggccaytg tggcgaatgm gagtcgtctg agct

44

<210> 36  
 <211> 15  
 <212> PRT  
 <213> Hepatitis C Virus

<220>  
 <221> MISC\_FEATURE  
 <222> (4)..(4)  
 <223> wherein Xaa = Asn or Ile

<220>  
 <221> MISC\_FEATURE  
 <222> (7)..(7)  
 <223> wherein Xaa = Asn or Asp

<220>  
 <221> MISC\_FEATURE  
 <222> (12)..(12)  
 <223> wherein Xaa = Ser or Ala

<400> 36

Gly	Arg	Ile	Xaa	Leu	Ser	Xaa	Gly	Thr	Ala	Tyr	Xaa	Gln	Gln	Thr
1				5				10					15	

<210> 37  
 <211> 44  
 <212> DNA  
 <213> Hepatitis C Virus

<220>

<221> misc\_feature  
<222> (11)..(11)  
<223> wherein w = a or t

<220>  
<221> misc\_feature  
<222> (19)..(19)  
<223> wherein r = a or g

<220>  
<221> misc\_feature  
<222> (34)..(34)  
<223> wherein k = g or t

<400> 37  
ggcgcgtatca wcctgtccra cggtaaccgt tackctcagc agac

44

<210> 38  
<211> 44  
<212> DNA  
<213> Hepatitis C Virus

<220>  
<221> misc\_feature  
<222> (7)..(7)  
<223> wherein w = a or t

<220>  
<221> misc\_feature  
<222> (15)..(15)  
<223> wherein y = c or t

<220>  
<221> misc\_feature  
<222> (30)..(30)  
<223> wherein m = a or c

<400> 38  
catagtwgga caggytgcca tggcgaatgm gagtcgtctg agct

44

<210> 39  
<211> 17  
<212> PRT  
<213> Hepatitis C Virus

<220>  
<221> MISC\_FEATURE  
<222> (4)..(4)  
<223> wherein Xaa = Asn or Ile

<220>  
<221> MISC\_FEATURE  
<222> (14)..(14)



<223> wherein Xaa = Ser or Ala

<400> 39

Gly Arg Ile Xaa Leu Ser Asp Gly Gly Ile Thr Ala Tyr Xaa Gln Gln  
1 5 10 15

Thr

<210> 40

<211> 50

<212> DNA

<213> Hepatitis C Virus

<220>

<221> misc\_feature

<222> (11)..(11)

<223> wherein w = a or t

<220>

<221> misc\_feature

<222> (40)..(40)

<223> wherein k = g or t

<400> 40

ggccgtatca wcctgtccga cgggtggtatc accgcttack ctcagcagac

50

<210> 41

<211> 50

<212> DNA

<213> Hepatitis C Virus

<220>

<221> misc\_feature

<222> (7)..(7)

<223> wherein w = a or t

<220>

<221> misc\_feature

<222> (36)..(36)

<223> wherein m = a or c

<400> 41

catagtwwga caggctgccca ccatagtggc gaatgmgagt cgtctgagct

50

<210> 42

<211> 15

<212> PRT

<213> Hepatitis C Virus

<400> 42

Gly Arg Ile Asn Leu Ser Gly Asp Thr Ala Tyr Ala Gln Gln Thr  
 1 5 10 15

<210> 43  
 <211> 39  
 <212> DNA  
 <213> Hepatitis C Virus

<400> 43  
 acgggaaccc tgcggagctg ccaaccaacc aggtctttg 39

<210> 44  
 <211> 55  
 <212> DNA  
 <213> Hepatitis C Virus

<220>  
 <221> misc\_feature  
 <222> (37)..(37)  
 <223> wherein r = a or g

<400> 44  
 caacgttggt gtacatctgg gtaaccggac ctttcgrgga agcgatggta cgggt 55

<210> 45  
 <211> 37  
 <212> DNA  
 <213> Hepatitis C Virus

<220>  
 <221> misc\_feature  
 <222> (19)..(19)  
 <223> wherein m = a or c

<400> 45  
 ccaggaaggt ctgggtagmg gtggaaacga tctgaac 37

<210> 46  
 <211> 40  
 <212> DNA  
 <213> Hepatitis C Virus

<220>  
 <221> misc\_feature  
 <222> (22)..(22)  
 <223> wherein w = a or t

<400> 46

ctttagcaac accacgggtg gwaacagcag cacggaagat

40

<210> 47  
<211> 52  
<212> DNA  
<213> Hepatitis C Virus

<220>  
<221> misc\_feature  
<222> (21)..(21)  
<223> wherein k = g or t

<220>  
<221> misc\_feature  
<222> (36)..(36)  
<223> wherein w = a or t

<400> 47  
accgtggtaa acggtccaca kaacaccgtt gatggwggta gccaggaagg tc

52

<210> 48  
<211> 78  
<212> DNA  
<213> Hepatitis C Virus

<220>  
<221> misc\_feature  
<222> (21)..(21)  
<223> wherein k = g or t

<220>  
<221> misc\_feature  
<222> (36)..(36)  
<223> wherein w = a or t

<220>  
<221> misc\_feature  
<222> (60)..(60)  
<223> wherein m = a or c

<400> 48  
accgtggtaa acggtccaca kaacaccgtt gatggwggta gccaggaagg tctgggtagm

60

ggtggaaacg atctgaac

78